



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,745	03/29/2004	Marty L. Stromquist	2003-IP-012798U1	1690
7590	06/02/2006		EXAMINER	
Robert A. Kent Halliburton Energy Services 2600 South 2nd Street Duncan, OK 73536-0440			STEPHENSON, DANIEL P	
			ART UNIT	PAPER NUMBER
			3672	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/811,745

Applicant(s)

STROMQUIST, MARTY L.

Examiner

Daniel P. Stephenson

Art Unit

3672

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 5,014,785 in view of Wilson et al. 5,402,847.

Puri discloses a method of stimulating a water sensitive coal bed seam comprising contacting the coal bed seam with nitrogen gas (see col. 2, lines 64-66) and producing methane gas. Puri states the nitrogen can be heated (col. 3, lines 30-33) at a temperature above the formation temperature (claim 21) but does not disclose the nitrogen is hot gas which heats the coal seam such the coal bed seam shrink and forms methane gas flow passages. Wilson teaches the use injection gases, at about 350 F (col. 2 lines 64-65), in coal bed seams shrinks the coal bed and increases cleats and interstices for methane gas to flow through (col. 3, lines 6-16). As it would be advantages to increase the flow passages to increase methane production, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri to have hot nitrogen gas to heat the coal bed seam and shrink the coal in view of the teachings of Wilson.

Referring to claim 2, Puri discloses the coal bed seam is under saturated with low pressure methane gas.

Referring to claim 4, Puri, as modified by Wilson, discloses the nitrogen is pumped at a low rate and pressure (col. 3, line 34-39).

Referring to claim 5, Puri, as modified by Wilson, disclose the nitrogen is pumped from the surface (col. 3, lines 67- col. 4 line 8).

3. Claims 6,7, and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 5,014,785 in view of Wilson et al. 5,402,847 as applied to claim 1 and further in view of Jamaluddin 5,539,853.

Referring to claims 6-7, Puri, as modified, disclose the nitrogen is heated but does not disclose an electric heater in the wellbore. Jamaluddin et al. teaches that electrical heaters disposed with in a wellbore are well known in the art (see col. 1, line 43-col. 2, lines 65). As one of ordinary skill in the art would be familiar with located an heater downhole and it would be advantageous to heat the nitrogen as close to the coal bed to avoid loss of heat, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson to locate the heater in the wellbore in view of the teachings of Jamaluddin.

Referring to claim 9, Puri, as modified does not disclose the heater is near the coal bed. However, it order to prevent the nitrogen gas from losing heat before entering the coal bed, it would be advantageous to have the heater located as near the coal bed as possible. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin to locate the heater near the coal bed seam.

Referring to claims 10, Puri, as modified, does not disclose coiled tubing. Jamaluddin teaches (fig. 5) using coiled tubing (at 504) to pump a treatment fluid into a well. Coiled tubing is a well-known method of injecting fluids into a well. As one of ordinary skill in the art would

Art Unit: 3672

be familiar with the use of coiled tubing, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson, to use coiled tubing in view of the teachings of Jamaluddin.

Referring to claims 11, Jamaluddin teaches the heater is connected to coiled tubing (col. 4, line 34).

4. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 5,014,785 in view of Wilson et al. 5,402,847 as applied to claim 1 and further in view of Bross 5,769,165.

Puri, as modified, does not disclose a casing with perforations. Bross discloses a casing (at 16) with perforations (at 22). The casing helps to support the well and the perforations help to facilitate the flow of the injection material into the coal bed. As it would be advantageous to have a casing to support the wall of the well and perforation to facilitate the flow of nitrogen into the coal bed, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson, to have a casing with perforations in view of the teachings of Bross.

5. Claims 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri '785 in view of Wilson, '847 and Jamaluddin et al. 5,539,853 as applied to claims 10 and 19 and further in view of Schultz et al. 4,962,815.

Puri, as modified, does not disclose packers. Schultz teaches (fig 2) packers above and below a treatment area to isolate the treatment area. Therefore allowing more treatment fluid to flow into the treatment area. As it would be advantageous to inject as most of the nitrogen into the coal bed seam, it would be obvious to one of ordinary skill in the art at the time of the

Art Unit: 3672

invention to further modify the method disclosed by Puri, as modified by Wilson and Jamaluddin to have packer above and below the coal bed seam in view of the teachings of Schultz.

6. Claims 13,14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Puri '785 in view of Wilson, '847 and Jamaluddin et al. 5,539,853.

Referring to claims 13 and 14, Puri disclose providing a source of nitrogen on the surface and pump the gas at a relative low rate in to wellbore into the coal bed seam and heating the nitrogen to a temperature above the formation temperature and producing methane gas. Puri does not disclose a heater or the nitrogen heats the coal bed and causes it to shrink and form flow passages. Jamaluddin et al. teaches that electrical heaters disposed with in a wellbore are well known in the art (see col. 1, line 43-col. 2, lines 65). Wilson teaches the use injection gases, at about 350 F, in coal bed seams shrinks the coal bed and increases cleats and interstices for methane gas to flow through (col. 3, lines 6-16). As it would be advantages to increase the flow passages to increase methane production and electric heaters are well known in the art it would be advantageous to heat the nitrogen as close to the coal bed to avoid loss of heat, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri to have a heater in view of the teachings of Jamaluddin and to have hot nitrogen gas to heat the coal bed seam and shrink the coal in view of the teachings of Wilson.

Referring to claim 16, Puri, as modified does not disclose the heater is near the coal bed. However, it order to prevent the nitrogen gas from losing heat before entering the coal bed, it would be advantageous to have the heater located as near the coal bed as possible. Therefore, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the

method disclosed by Puri, as modified by Wilson and Jamaluddin to locate the heater near the coal bed seam.

Referring to claims 17, Puri, as modified, does not disclose coiled tubing. Jamaluddin teaches (fig. 5) using coiled tubing (at 504) to pump a treatment fluid into a well. Coiled tubing is a well-known method of injecting fluids into a well. As one of ordinary skill in the art would be familiar with the use of coiled tubing, it would be obvious to one of ordinary skill in the art at the time of the invention to further modify the method disclosed by Puri to use coiled tubing in view of the teachings of Jamaluddin.

Referring to claims 18, Jamaluddin teaches the heater is connected to coiled tubing (col. 4, line 34).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri et al. 5,014,785 in view of Jamaluddin '853 and Wilson et al. 5,402,847 as applied to claim 13 and further in view of Bross '5,769,165.

Puri, as modified, does not disclose a casing with perforations. Bross discloses a casing (at 16) with perforations (at 22). The casing helps to support the well and the perforations help to facilitate the flow of the injection material into the coal bed. As it would be advantageous to have a casing to support the wall of the well and perforation to facilitate the flow of nitrogen into the coal bed, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin, to have a casing with perforations in view of the teachings of Bross.

Art Unit: 3672

8. Claims 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Puri '785 in view of Wilson, '847 and Jamaluddin et al. 5,539,853 as applied to claim 13 and further in view of Dahl et al. 3,814,480.

Puri, as modified, does not disclose a plurality of coal bed seams. Dahl teaches typical coal formation can include a plurality of coal bed seams (col. 2, lines 60-65). As one of ordinary skill in the art would be familiar with a formation having a plurality of coal seams, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the method disclosed by Puri, as modified by Wilson and Jamaluddin, to have a plurality of coal seams in view of the teachings of Dahl.

#### ***Response to Arguments***

9. Applicant's arguments filed 3/17/06 have been fully considered but they are not persuasive.

10. It is the assertion of the applicant that the Puri reference in view of the Wilson reference does not show the use of Nitrogen gas in arrange from the formation temperature to about 325 °F. The examiner respectfully traverses this assertion. First it is noted that nowhere in the specification is criticality given to the temperature of about 325 °F. However the specification does refer to 350 °F. Second, the Puri '785 reference discloses that the gas is heated to above the formation temperature, but does not disclose a specific temperature. The examiner has broadly interpreted this to be any temperature above the formation temperature. Third, the Wilson reference refers to gas that is heated to *about* 350 °F, which has been broadly interpreted to be *about* 325 °F. Since it can be viewed that the indefinite nature of both statements may overlap.



***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel P. Stephenson whose telephone number is (571) 272-7035. The examiner can normally be reached on 8:30 - 5:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on (571) 272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
David Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

DPS *11/7*